# TENMARS

## Temperature / Humidity Meter

## TM-183 / TM-183P

User's Manual

CE

HB2TM1830003

**TENMARS ELECTRONICS CO., LTD**

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## 1 PREFACE

Thank you for your patronage. Please read these operating instructions carefully so that you may correctly operate the Temperature / Humidity Meter, allowing it to perform all its intended functions at optimum level.
The Temperature /Humidity Meter uses a highly accurate sensor chip to measure relative humidity and temperature.
It is perfect for many industrial applications, laboratory and other types of work locations.

## 2 CHARACTERISTICS

Dual display of temperature and humidity.
Select between different temperature scales (°C / °F).
Simultaneously hold both temperature and humidity readings.
Simultaneously hold both Maximum and Minimum and Average readings (MAX/MIN/AVG) with time marks.
Relative subtraction value (REL) function.
Alarm alert (SET) function.
Auto-power off.
DEW-POINT and WET-BULB temperature measurement.
Stores up to 200 readings





## 3 SPECIFICATIONS

### 3.1 General Specifications

Display : Dual LCD display. The maximum value on the primary display is 1999.
The maximum value on secondary display is 9999.
Low Battery Indicator : When the LCD displays  symbol, please replace the battery.
Sampling Rate : 1 sample per second.
Power Supply : One 9V battery, NEDA 1604, IEC 6F22 or JIS 006P.
Battery Life : 200 hours during consecutive use.
Dimensions : 200 × 55 × 38 mm (L×W×H)(TM-183)
130 × 56 × 38 mm (L×W× H)(TM-183P)
Weight : 200g (excluding the battery)
Accessories : User manual, battery, carrying case , Temperature and humidity probe(TM-183P).
Operating Temperature and Humidity :
0°C ~ +60°C, <95% RH. (non-condensing)
Storage Temperature and Humidity:
-10 to 60°C, <70% RH. (non-condensing)

### 3.2 Electrical Specification:
**(Temperature: 25°C, Humidity : <90% RH)**

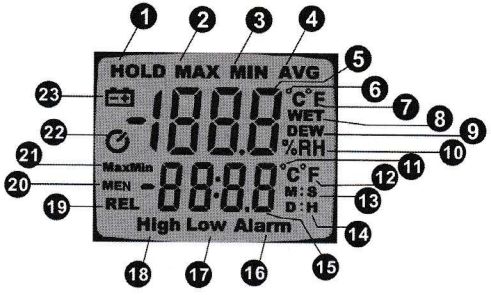
Temperature Measurement Range :
-20.0°C ~ +60.0°C(-4.0°F - +140.0°F).
Humidity Measurement Range :1% ~ 99%RH.

### 3.3 Accuracy:

Humidity : ±3% (20~80%RH,@25°C)
±5% (<20%>80%,@25°C)
Temperature : ± 0.8°C, ±1.5°F.

## 4 OPERATING INSTRUCTIONS

### 4.1 LCD Display Functions:

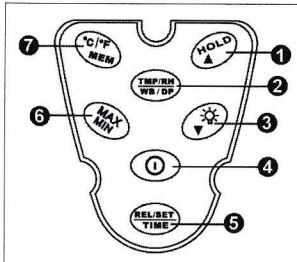



1. Data Hold
2. MAX Data Hold
3. MIN Data Hold
4. AVG Reading
5. Primary Display
6. °C Temperaure Scale
7. °F Temperture Scale
8. WET-BULB
9. DEW-POINT
10. Relative Humidity
11. °C Temperature Scale
12. °F Temperature Scale
13. Minute/Second
14. Day/Hour
15. Secondary Display
16. Alarm Indicator
17. Low Alarm Indicator
18. High Alarm Indicator
19. Relative Subtraction Value
20. Stored Data Records or Historical Data Records
21. Record MAX, MIN, and AVG Enable
22. Auto-Power Off Indicator
23. Low Battery Detect





### 4.2 Button function:




1. Hold or Set to turn upward Button.
2. DEW-POINT/WET-BULB/Temperature/Relative Humidity Switch Button.
3. Backlight or Set to turn downward button.
4. On/Off Button.
5. REL/Alarm Set/Time Display Switch Button.
6. MAX/MIN/AVG Reading Button.
7. °C/°F Temperature Scale Switch and Store Reading Record Button.

### 4.3 Switch Temperature Scale (°C/°F)

Press °C/°F MEM button to change the temperature °C / °F unit.

### 4.4 Data Hold Button

Press HOLD button to enter the Data Hold mode. The LCD will display "HOLD" symbol and hold both the temperature and humidity readings at the same time. Press HOLD button again to exit this mode.

### 4.5 MAX/MIN/AVG Mode

- In normal mode, press the MAX MIN button more than one second to enter the MAX/MIN mode, and start to count time; the LCD primary display shows the

current measuring temperature, the LCD secondary display shows the recorded time; in the MAX/MIN mode, press the MAX/MIN button more than 1 second will exit the MAX/MIN mode.

- In the MAX/MIN mode, press the MAX/MIN button repeatedly less than one second, the LCD primary display loop shows the MAX → MIN → AVG →current measured value.
- In the MAX/MIN mode, press the TMP/RH WB/DP button repeatedly, the LCD primary display loop shows the °C→°F→%RH→DEW→WET.
- In the MAX/MIN mode, press the REL/SET TIME button, the LCD secondary display will switch to the Minute/Second ( M/S ) or Day/Hour ( D/H ); press the HOLD button to stop the count time, press again to continue count time.

### 4.6 Backlight

Press the ☼ button to turn on the backlight, press this button again to turn it off. The auto-off backlight time is about 15 seconds.

※In the Reading Measured Data Mode, need to press the ⏻ and ☼ button together to turn on or turn off the backlight.





### 4.7 Power ON/OFF

Press the ⏻ button to turn on or turn off the meter.

The ⏻ button uses as the combination button to operate other functions while the thermometer on, the power off function is useless while the other button and Power button are pressed at the same time, that mean it executes other functions.

The combination button as below:

In normal mode:

- Press the ⏻ and the °C/°F MEM button less than one second -------- To read measuring records latest.
- Press the ⏻ and the °C/°F MEM button more than one second --------To delete saved records.
- Press the ⏻ and the ☼ button less than one second-------- To turn on or turn off Auto power-off function.

In the Reading Measured Data Mode:

- Press the ⏻ and the ☼ button -------TO turn on or turn off the backlight.

### 4.8 DEW-POINT /WET-BULB/Relative Humidity Switching

In normal mode or MAX/MIN mode, press the TMP/RH WB/DP button to switch temperature→dew-point→wet-bulb→ relative humidity.

### 4.9 Relative Deduction Value(REL):

In normal mode, press the REL/SET TIME button less than one second to turn on or turn off REL function; when the REL function is turned on, the temperature/humidity meter will store current measured readings and reset the LCD display to 0 and will take the stored reading as the reference value and subtract it form subsequent readings.

### 4.10 Alarm Intimate Setting Button

In normal mode, press the REL/SET TIME button more than one second to enter high temperature alarm mode setting; in the Alarm Intimate Setting mode, press the REL/SET TIME button repeatedly less than one second, the LCD will show the°C High Alarm →°C Low Alarm →%RH High Alarm→ %RH Low Alarm in sequence。The setting alarm value isn't cleaned up when the thermometer turn off.

Press the HOLD ▲ or the ☼ ▼ button less than one second to increase or decrease current setting value; Press the HOLD ▲ or the ☼ ▼ button more than one second to continuously increase or decrease current setting value, after continuously increasing or decreasing 20 decimal figure that it will increase or decrease on single digit directly.





### 4.11 Alarm Setting Mode

When it ring an alarm, if the temperature is over the setting value, the °C or °F on LCD will be flickering; if the humidity is over the setting value, the " %RH " on LCD will be flickering, if you want to cancel the sound function of the alarm, please press the " HOLD " button more than one second to cancel, the sound is closed, the HIGH or LOW Alarm sign will disappear, and the alarm will set automatically as follows and save the setting.

LOW and HIGH Temperature Alarm: 0.0°C/+60.0°C.

LOW and HIGH Humidity Alarm: 0.0%RH/99.0%RH

Temperature Alarm Range:
-20.0°C~ +60.0°C(-4.0°F ~ +140.0°F)
Humidity Alarm Range : 1.0%RH~99.0%RH

### 4.12 Enable or Disable Auto-Power Off Function

The Auto-Power Off function is enable when the thermometer on and Auto-Power Off symbol shoes. If stop any operating after 15 minutes that will execute Auto-Power off function. Press ⏻ and ☼ ▼ button at the same time to enable or disable Auto-Power Off function and the Auto-Power Off symbol with the previous setting will appear or disappear.

### 4.13 Saving and Reading the Measured Data (°C / °F /MEM )

#### 4.13.1 Saving Measurement Data

When measuring, press the °C/°F MEM button more than one second to the LCD will display " MEM " flickering 2 seconds then disappeared, saving the current measuring of displayed. The instrument can save at most 200 sets of data. When the data are full of 200 sets and can save the data again, the latest data will cover the earliest data, it just only can save the latest 200 sets of data.

#### 4.13.2 Reading the Measurement Data Mode

Press ⏻ and °C/°F MEM button at the same time to enter reading mode. The LCD primary display shows the MEM, and the secondary display shows the current record number. Press the TMP/RH WB/DP button to switch displayed temperature→relative humidity→dew-point→wet-bulb in sequence. Press HOLD ▲ or ☼ ▼ button to look forward or rearward current recording number and value. Long press HOLD ▲ or ☼ ▼ button to look forward or rearward current recording value continuously. When increase or decrease 20 recording numbers continuously, then increase or decrease at ten digits.





#### 4.13.3 Delete the stored data

Press ⏻ and °C/°F MEM button more than one second at the same time, the LCD will display " CLr ", the stored data already be deleted.

## 5 CHECK BEFORE USING

Make sure the battery is installed properly. If the LCD displays [−+], please replace the battery.
When turning on the thermometer, all LCD displayed items will be lighted about 1 second.
Make sure all the function switches are positioned correctly.
( Make sure the "HOLD" sign is not displayed on the LCD. )

## 6 MEASUREMENT METHOD

Power on the Temperature / Humidity Meter. If you want to disable the auto-power off function, please refer to 4.12 section.
Put the Temperature / Humidity Meter into the place wait for measuring.
Keep the thermometer still about 15 minutes to achieve the best readings. ( According to measuring space and the measuring temperature and humidity maybe increase or decrease of readings. )

## 7 Cautions

Please avoid using the Temperature / Humidity Meter in an environment with drastic temperature and humidity changes.
Do not put the thermometer in an environment prone to high temperature, high humidity, or vigorous vibrations.
Avoid exposing the thermometer in a chemical-contaminated environment.
When do not use the Temperature / Humidity Meter for an extended period of time, remove the battery to avoid damage to the thermometer due to the leaking battery fluid.
Cleaning and Checking of temperature sensor :
Pay attention to smoke、dust on the humidity sensor will let the sensor's response time slow down, and causing inaccuracy when measuring. Clean up the sensor periodically by simply blowing away the dust particles.
Do not use water、alcohol or other chemical solvent when cleaning.
Do not put the Temperature / Humidity Meter in any liquid to prevent damage to the thermometer.